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ABSTRACT

This paper presents a review of research projects recently completed by teachers in South Africa. The purpose is to describe the nature of these projects and to see what trends emerge from an analysis of the location, purpose, design, methodology, and findings of the projects. Five different projects in which more than 70 teachers have been involved are reviewed. Findings indicate that teacher research work is located in larger teacher education projects, and that clear differences exist in set-up and purposes of the studies. Action research methodology has been employed with varied levels of sophistication, rendering findings that are very personal and reflecting the complexities and conditions of teachers' work. The key issues highlighted and discussed are the location of teacher research work, the interests served by teacher research, the varied uses of action research, and the nature and value of findings made by teacher researchers. Some implications for further teacher research in South Africa are explored. An appendix provides brief descriptions of five projects reviewed in this document. (Approximately 60 references.) (LL)

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TEACHER RESEARCHER PROJECTS IN SOUTH AFRICA
SOME TRENDS AND ISSUES

by

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Paper presented at the Annual Meeting of the American Educational
Research Association (Atlanta, GA, April 12-16, 1993).

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TEACHER RESEARCHER PROJECTS IN SOUTH AFRICA: SOME TRENDS AND ISSUES

Paper presented at the 1993 Annual Meeting of the American Educational Research Association, Atlanta, Georgia.

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This paper presents a review of research projects recently completed by teachers in South Africa. The purpose is to describe the nature of these projects, and to see what trends emerge from an analysis of the location, purpose, design and methodology, and findings of the projects. Five different projects in which more than 70 teachers have been involved, are reviewed. Findings indicate that teacher research work is located in larger teacher education projects, and that clear differences exist in set-up and purposes of the studies. Action research methodology has been employed with varied levels of sophistication, rendering findings that are very personal and reflect the complexities and conditions of teachers' work. The key issues highlighted and discussed are the location of teacher research work, the interests served by teacher research, the varied use of action research, and the nature and value of findings made by teacher researchers. Some implications for further teacher research in South Africa are explored.

The last decade in South Africa saw a dramatic increase in the number of reported teacher researcher projects. This is evident in the increase in the number of teacher education institutions (such as universities), and organizations (such as non-governmental organizations) involved in teacher education, taking initiative to facilitate teacher research. This renewed interest stems from the need of universities to become community centered and more meaningful involved in educational change in the country, and the establishment of more than 50 NGO's over the last 5 years working with teachers (Human Awareness Programme 1993). An increasing number of South Africans contribute to conferences abroad, as is evident in the

involvement in Classroom Action Research Network in the UK (Van den Berg 1992, Robinson 1992, Davidoff 1992, AERA, and the Conferences on School-based Innovations (Nicolson and Van den Berg 1989).

There is a growing realization within progressive circles in South Africa that teacher voices must be heard (Davidoff 1991, Van den Berg 1992), and that meaningful in-service programmes should allow for teacher views to be expressed (Flanagan 1991; Robinson 1992). It is seen as necessary for present processes of education transformation in South Africa that teachers contribute and take part in decision making and curriculum development.

Along with the increase in numbers of projects, and the growing realization, comes a debate about teachers' contributions to knowledge about teaching, the role of action research, and the contribution of such processes to the transformation and democratization of education. A number of claims are made about these ends by various broader projects of which teacher research work is part. It is therefore appropriate at this time to see what completed teacher researcher projects in South Africa purport to achieve, how these projects differ, and what we can learn from the experiences and the emerging trends in these projects. The purpose is to highlight issues and explore the possibilities of teacher research for the transformation of education in South Africa.

Teacher research is defined in this paper as systematic, intentional enquiry by teachers, shared with peers and others and made public (Cochran-Smith and Lytle 1990; Stenhouse in Rudduck and Hopkins 1985). Action research is seen as the way in which teachers reflect about their practices, build their personal theories about teaching, and change their practices (Carr and Kemmis 1991).

TEACHER RESEARCH AND EDUCATION TRANSFORMATION IN SOUTH AFRICA

Historically teacher research work in South Africa has been limited. Since the establishment of the South African Journal of Education for example, no articles have been published by teachers,

and only a few articles on the views of teachers as researched by academics and graduate students using qualitative methodology. No article was published by teachers using action research as a methodology.

The historical lack of teacher research should be seen against the background of a research tradition characterized by the positivist paradigm, an education system characterized by authoritarian decision making, and curriculum development practices that only acknowledge the contributions of expert academics and bureaucrats. South Africa has a long tradition that views education departments, universities and teacher training colleges as the places where ideas about good teaching are developed, while no or very little official attention is given to teachers' views. This is especially evident in the fact that the government's Educational Renewal Strategy and the new Curriculum Model for South Africa don't reflect teacher views. The other recent initiative from more progressive circles outside the official government, some teachers were involved to a limited extent in the National Policy Investigation. This indicates that the "experts" are doing the talking and influencing the decisions about education in South Africa.

The call for transformation of education in South Africa has been echoed by numerous educators, politicians, parents, teachers, and children - a call for a fair, just, democratic, non-racial and non-sexist education system. In this context there is a growing need to hear voices of teachers as a disenfranchised group, a need which is responded to by the recently growing number of teacher researcher and action research and projects which have been established formally

SELECTION AND BRIEF DESCRIPTION OF PROJECTS

The process employed in order to identify projects for this review, involved searches in computerized databases, as well as contacts with institutions and organizations involved in facilitating teacher research work. The searches for reports and texts about

teacher research/action research were conducted on the databases SABINET (South African Bibliographic and Information Network - a co-operative database to books in South African libraries), ISAP (Index to South African Periodicals, produced by tertiary institutions and professional organizations), and the NAVO database of current and completed projects, theses, and dissertations in the human sciences in South Africa. Letters were also faxed and follow-up phone calls were made to universities and non-governmental organizations requesting reports about completed work teacher research within the larger projects. These projects were mainly teacher education initiative taken by either universities or non-governmental organizations (development agencies working outside of government structures).

Of the various projects identified, a selection was made of research projects completed by teachers/practitioners for which formal reports describing the projects, rationale, and methodology could be accessed. Reports include mini-theses, conference papers, annual reports, and project evaluations. The reports which form the database for this research include those written by teachers themselves, and those written by facilitators and project leaders about the projects and teachers' work.

Appendix 1 contains the list and brief summary of projects reviewed in this survey. The selection represents the current published initiatives in the area, and excludes work in progress and unpublished work. Various materials development projects exist, but were not reviewed because methodology papers either do not exist, or could not be accessed. A brief description of each of the selected projects follows:

1. The Mathematics Education Project (MEP) is based at the University of Cape Town, and the main aim is to engage in in-service work with primary and secondary mathematics teachers. The Project grew out of concerns at the University of Cape Town about the state of mathematics education in South Africa, and was developed with a strong focus on teacher involvement in the improvement of teaching processes (Breen 1992). The work done for the purpose of developing teaching practice, is reported in Reflections - Mathematics teachers'

voices (Mathematics Education Project 1992). This publication contains "reflections of the ideas, thoughts and classroom work" of seven primary school teachers, many of which developed out of an intensive course offered by MEP over a four month period. Each teacher was asked to write about the changes in their teaching of mathematics.

The reports by teachers include suggestions about the teaching of mathematics in a school located in a squatter community (Mbeki 1992); reflections on the introduction of pupil-centered teaching as an alternative to take the lived realities of children into account, and to make mathematics more accessible to learners (Sopapaza 1992; Ndidi 1992; Agherdien 1992; Tabata 1992), and alternative ways of teaching parts of the primary mathematics syllabus (Ntuli 1992; Rhoda 1992).

2. The Primary Education Project (PREP) is another project based at the University of Cape Town, and was started in 1987. As a project it "proposed to test the feasibility of action research as a means to support practicing teachers who seek to improve the educational provision at the schools in which they work" (Flanagan 1991). The project is seen as an attempt to provide an alternative form of in-service education, and was designed so that control lay with teachers who made a conscious choice of action research as "a process of refining understanding through the implementation of strategic change" (Flanagan 1991).

The project involved 35 teachers from four primary schools (Walker 1991). Researchers and facilitators were involved in helping teachers plan lessons in areas of their teaching in which they had difficulty. Lessons were either videotaped, audiotaped or observed, and in some cases notes were made by teachers about their lessons. Discussions and reconstruction of lessons afterwards were seen as a process of action research, defined in a strategic sense: research was not seen as rigorous in the academic sense, and the data collection not extensive. PREP staff apparently wanted to "capture the notion of deliberate learning as a strategy to assist teachers to evaluate their own learning" (Walker 1991).

3. The Science Education Project (SEP) is based at the University of the Witwatersrand, promoting science teaching in different regions

in South Africa. For the purpose of this study, the project located with the University of Durban Westville called the Clermont Science Project (CSP), is focussed on. CSP was initiated by Naidoo as a Masters study and a report written up as a conference paper (Sameul, Naidoo and Suransky 1992). A group of thirteen high school science teachers from three black schools in Natal was involved. Initial meetings focussed on the rationale of the project, on general problems in the syllabus, as well as on specific problems teachers wanted to work on. The facilitators ran a workshop to deal with "inaccurate conceptions of practical work in Science". Teachers visited the University and worked on a booklet about practical work in Science.

4. The Primary Science Project (PSP) was initially established by the Urban Foundation, a non-profit development organization, and has operated independently since the beginning of 1993. For the purpose of this review documentation was obtained from the Natal PSP group. Facilitators offered workshops to primary school teachers in the Natal region, and various Teacher Committees have been established in school circuits. PSP coordinators and field workers facilitated teacher projects in the circuits.

5. The Masters in Action Research Project (MARP) is based at the University of the Western Cape (UWC), and is in a category of its own due to the fact that the teacher research work has all been done as part of a formal masters course. The intention was to encourage teacher reflection, and to contribute to the transformation of classroom practices (Nicolson and Van den Berg 1989). Details about four completed projects were accessed. All the studies describe a) the context of the work done, including some analyses of the dominant culture in education, b) a description of action research methodology as an alternative to the "positivistic tradition" of research in South Africa, and c) provide personal accounts of own action research work. The action research work focus on changing teaching in the graphics classroom in high school (Cowan 1990), pupil participation in the teaching of history (Davids, 1990), participatory teaching and learning processes in the English language classroom (Manie 1992), and introducing changes in a college classroom as prompted by the

involvement in the masters degree course (Savahl 1992).

Several other teacher studies have been completed in this Masters programme, but were not accessed for the purpose of this study. They include studies on the teaching of history (Brown 1992; Papler 1991), Geography (Najjaar 1991), Science (Isaacs 1991), co-operative learning (Hartman 1990), improvement of attitudes (Cleophas 1990), increasing student involvement in learning (Thuynema 1991), and promoting democratic practices in the classroom (Van Louw 1990).

TRENDS EMERGING FROM TEACHER RESEARCH WORK

The projects have been analysed and compared in terms of where they were initiated and established, what the stated purposes and goals were, what methodology was used, and what the main findings were.

Location of teacher research work

All the teacher research work reviewed for this study seem to be located within larger projects established mainly for the purpose of teacher education, and/or curriculum development. Most of the larger projects have been initiated by non-governmental organizations, some of which work closely with university faculties like SEP, MEP and PREP, while others operate independently, like PSP. Work in the Masters in Action Research Programme is done as part of an academic teacher education curriculum at the University of the Western Cape.

The location of teacher research work close to universities means that by design they have been created to contribute to whatever mission the organization has set for itself, be it the professional development of teachers, improvement of teaching in a content area like mathematics and science (eg. Mathematics Education Project, Primary Science Project), or the enhancement of skills of teachers to do action research (University of the Western Cape project).

Another trend is that more than half the studies included in this review have involved primary school teachers, while teachers from

secondary schools or tertiary institutions made out the smaller number of studies.

An analysis of the way in which projects have been set up, reveals the strong role of organizations and their facilitators and project leaders in initiating teacher research work. In none of the reports was mention made of teachers themselves taking the initiative to start any systematic research work. Teachers were recruited by organizations with a set agenda to develop teachers' knowledge and skill, mainly in the content areas of mathematics and science. The Masters project was different because teachers were attracted to enrol as students.

Purposes and goals of teacher projects

Purpose statements by teachers reporting on their own work seem all to indicate the intention to change and improve own practices. These include how mathematics teaching can be made more relevant and interesting through a child-centered approach (for example Sopapaza (1992), and Tabata (1992) in the Mathematics Education Project), and trying to understand the patterns of interaction that enable children to learn (Marneweck 1991). The teachers involved in the Masters in Action Research Programme saw the purpose of their studies to examine their own practices using action research. Davids (1990) for example argues for the transformation of educational thought and practice facilitated by a process of critical self-reflection.

The purpose statements by facilitators were, as in the case of for example, the Primary Education Project, found to be somewhat extended beyond changes in the classroom. These include statements about the testing of the feasibility of action research as an in-service teacher training strategy, the development of university/teacher collaboration, and the exploration of an alternative pedagogy for a future South Africa (Flanagan 1991; Philcox 1991). The purpose of the Masters in Action Research programme was to focus "on classroom and school transformation in the service of political transformation", and to take "teacher voice and

collective work seriously" (Van den Berg 1992).

While it was present in the reports written by facilitators, the reports of teachers in, for example, the Mathematics Education Project were clearly not informed by analyses of power issues in society, or linking classroom work with macro issues in South Africa, and actioned focussed on improved teaching, and not on action for transformation.

The apparent differences in the purpose statements of teachers and facilitators is an indication that the work of facilitators with teachers is, as Walker (1988) put it, "informed by the understanding that teachers in South Africa can play a strategic role in developing and implementing transformative educational change", a view that is also shared by Breen (1992) and Nicolson and Van den Berg (1989). This difference between reports by teachers and their facilitators is not present in the Masters in Action Research Project of UWC. Both teachers and their facilitators reflected about the need to transform practices, as well as the broader education system (Van den Berg 1992, Davids 1990; Manie 1992; Cowan 1990).

The variation in purpose statements seems to resemble the different "knowledge interests" as described by Habermas (1987), and extended by Grundy (1987), and Carr and Kemmis (1991). The majority of reports by teachers seems to fall in the category of serving technical interests in the form of effective teaching. Descriptions are, for example, offered in some of the Mathematics Education Project work of bad poverty conditions, while there is no attempt to write about the reasons why, and what the ultimate purpose of change in this context would be. A sort passive acceptance of realities is then also evident: schools have syllabi that you have to follow, and problems will be solved by becoming more learner-centred, getting learners to become active in their own learning, and to develop skills like "experimental thinking", "visual imagination", "recognition of diagonals", and "association" (Mathematics Education Project 1992; also the trend in the Natal Primary Science Project 1992). These examples may be seen as serving the technical interests of better teaching.

The teacher research work in the Masters programme is according

to reports by the facilitators (Nicolson and Van den Berg 1989; Van den Berg 1992) as well as the teachers involved (eg. Davids 1990, and Cowan 1990) clearly serving an emancipatory interest. Teachers reflect critically about the context of their work, try to understand the patterns of power and domination in the classroom situation, as well as the macro society, and design actions in their classrooms to transform their work and contribute to education transformation.

Design and methodology

The teacher research work reviewed here, has a number of design characteristics in common. All studies rely on facilitators to a greater or lesser extent, and seem to follow the action research cycle of plan, act, observe, and reflect. In several of the reports by teachers, there is a clear acknowledgement that action research as a methodology is new and something they should try out. Especially in the UWC studies there was a special appreciation of how the action research methodology had contributed to the changes individual researchers had brought about in their own practices. This is especially valuable because teachers do not always see themselves as competent, as was openly acknowledged by some teachers.

The specific research questions asked by the different studies, appear to focus on individually perceived issues based on personal experience. These range from needs to investigate and change existing practices and to apply new teaching methods, to questions about how pupil participation can be increased. Teachers in the Masters programme seem also to ask basic, fundamental questions, such as what values are influencing own practices (Davids 1990). In some cases the research questions asked were facilitated and influenced by innovations suggested by the broader project of which the teacher work is part, like in the Primary Science Project where teachers needed to experiment with science kits (McNaught and Raubenheimer 1991). Teachers then typically experimented with alternatives that cause them to see problems in their own teaching, while a facilitator would be around to encourage reflection and advise on processes.

Specific techniques of gathering data include the normal range from personal diaries and reflections (Marneweck 1991), to participant observation and triangulation (Manie 1992). Teachers on the Masters programme were more sophisticated and tended to use a variety of data gathering techniques such as field notes, audio recordings, and student scripts (eg. Davids 1990).

As far as data analysis is concerned, none of the teacher reports included specific descriptions of systematic processes of analysis. The teachers involved in the Masters in Action Research project, were conscious about using reflection and comparison of experiences in different actions to analyse data (Davids 1990), as well as for example analysing videos with groups of learners (Manie 1992). Furthermore, there is, generally speaking, a lack of reflection by teachers on what informs their own views and what makes up personal theories about teaching. The teachers in the Masters programme reflected extensively on their own training as teachers, and the extent to which patterns of domination in society are reflected in the school.

Facilitators seem to play a key and significant role in all the teacher projects. This ranges from a very directive role where facilitators worked with teachers to encourage systematic reflection and change of practices (as in MEP and PSP), to situations where teachers were exposed to a very specific curriculum to study the education context of their work, the educational philosophies informing classroom work, and action research methodology (Masters in Action Research Project). Studies also differ in the extent to which they acknowledged and reflected about the influence of facilitators on their thinking as researchers. In general it seems that while facilitators are accepted as valuable resources in the action research process, it appears that the role and agenda of facilitators are not reflected upon in any critical way whatsoever by those being facilitated. This was evident in all the teacher reports, including the Masters in Action Research Project.

Findings/results of the teacher studies

Findings across projects seem to be of a very personal nature, and of special meaning and significance to the individual teacher. In general, the findings reflect the complexities and conditions of teachers' work, as well as what teachers have learned about themselves, specific practices, their learners, and processes involved in change. Examples include new methods for the teaching of reading (Walker 1991 about PREP teachers), the value of teachers working together (Philcox (1991) about PREP teachers), the value of action research methodology (Deaken and Parker (1991) about PREP; UWC Masters project), and developing a better understanding of subject matter (MEP).

It is clear that findings are presented as personal and valid knowledge constructions. In the case of the Masters in Action Research Project, teachers reflected extensively about what findings meant for them, as well as about the methodology they followed to make the findings. The report by Davids (1990) for example, describes findings about alternative practices to facilitate learner participation in teaching, learner reactions to changes in teacher behaviour, and the role of what Zeichner (1992, as quoted by Meulenberg-Buskens 1992) calls the macro situation in society. In the case of the teachers in the Masters project the link between classroom issues on a micro level, and macro issues were explored. An example is the outline given by Manie (1992) on socio-political issues, approaches to action research, and critical pedagogy and the role this plays in his own reflection about classroom practices.

In general, findings of teacher researchers seem to provide information about various innovative classroom activities, and personal relationships with children as well as what it really takes to change own practices under South African conditions.

DISCUSSION

The trends highlighted above, seem to centre around four issues for further discussion: the location of teacher research work, the interests served by teacher research work, the varied use of action

research methodology, and the nature and value of findings made by teacher research.

The finding that teacher research is located in larger projects in tertiary institutions or non-governmental organizations, and that teacher initiated work is seemingly non-existent, is problematic. This means teachers' work is by design seen as part of the agenda of these organizations. NGO's for example, are obliged to promote subjects and facilitate teacher work in order to report to sponsors, a need that may not in all cases serve the needs teachers have for researching their own practices.

The lack of teacher initiated work is indicative of the extent to which teachers in South Africa are disempowered. To research your own practice and share your findings as a teacher has, as a rule, not been rewarded in the educational system in South Africa. In fact, various barriers exist that discourage teacher research work. The barriers mentioned by Cochran-Smith and Lytle (1992) are just as valid for our situation: teaching is an activity conducted in isolation, with limited autonomy. Opportunities to do collaborative work with other teachers are limited, and within the occupation there is pressure to conform and be socialized in the profession. In addition there are the very South African factors of central control and lack of a legitimate system.

The second issue emerging from the review of teacher research in South Africa, is the various interests served with the work of teacher researchers. The review indicate that reports by teachers in most cases focus on better teaching for the sake of better teaching, and thereby serving a technical interest. This is quite understandable, given the conditions of teachers' work, and the need to survive in a system with the absence of basic facilities, and which in addition lacks credibility. While most facilitator reports claim to serve emancipatory and transformative interests, it is questionable whether those interests are in fact served. The exception is the work of teachers in the Masters in Action Research Project whose agenda is clearly to counter hegemonic practices: to work against the dominant education culture in this country, and to work for the transformation of education and teaching towards a just, non-racial and democratic society (Van den Berg 1992). This emancipatory interest is very relevant to the transformation of

education in South Africa. What makes it easier for teachers in the Masters project is of course the incentive to study towards a degree with the resulting financial and status rewards. In addition a discourse of transformation is developing and concerted efforts are made to develop participant's understanding of different forms of action research.

The interests served by teacher research work is furthermore very much determined by the role facilitators play, and the views and theories that inform their own work. The example of the work at the University of the Western Cape is very illustrative, with a specific political agenda driving the work of facilitators. Questions are raised however, about the agenda facilitators hold. Are the agendas open for reflection by teachers and facilitators? How do facilitator agenda impact on teacher research? Do they influence teachers as researchers to see what facilitators want them to see? What right do facilitators have to push their own agenda?

It is important that teachers also independently take the initiative to research their own practices, and sustain their work as researchers. The existence of such projects will enable us to then really evaluate the role of facilitators in teacher research.

The next issue is related to the varied use of action research as a methodology. This is again an indication of the role of facilitators in the larger projects of which teacher research work is part. The teachers in the Masters programme used action research methods with the greatest sophistication, and it is clear that they have had access to current international publications on action research: in fact, their work resembles what has been called critical or emancipatory action research (Carson 1990). Again the strong influence of facilitators are evident, and it is not clear how this influenced what teachers as researchers sees in data, whether they see what is out there, or what they want to see (Meulenberg-Buskens 1992).

If the model set by the UWC teachers is to be followed for other teacher research work in South Africa, then developing teachers' skills by using action research for transformative interests would involve extensive discussions about action research methodology, as well as promoting an understanding of macro and political factors influencing classroom work.

As discussed here, the impression is left that teacher research is all about using action research. This question is whether this is not a disempowering view which says that teachers can not do research unless they use action research. The point made by Cochran-Smith and Lytle (1992) about existing modes of enquiry in the classroom is worth pursuing. Surely teachers gather information by asking themselves questions about what happens in their classrooms. It will be useful for teacher research if clarity about existing enquiry methods could be developed.

The last issue around which the noted trends in teacher research in South Africa seem to centre, has to do with the findings of teacher research, and the value attached to it. It is accepted that findings produced through the processes of action research have value in terms of what are personal and local knowledge (Lytle and Cochran-Smith 1992). The challenge is for the knowledge base to be redefined as valid public knowledge which would make a significant contribution to what we know about teaching. To meet this challenge, it is important in South Africa to have a wide range of texts and reports written by teacher researchers about their work.

From the analyses made by Cochran-Smith and Lytle (1992) and Lytle and Cochran-Smith (1992) it is accepted that teacher research is seen as a "distinct way of knowing". Teachers are in the unique position to find out, to REsearch, construct knowledge, and find meaning in classrooms in ways not possible for people working at universities doing research about teaching.

Ultimately teacher research is a common search for meaning, and is essentially a process involving the co-construction of knowledge through "public talk". This view sees teacher research as part of larger efforts to transform teaching, learning, and schooling (Cochran-Smith and Lytle 1992), and ultimately society.

CONCLUSION

This paper has highlighted some trends in teacher research in South Africa. The general picture is a complex one: the education scene is changing, and there is a lot of talk about transformation, and the democratization of education. In this context teachers voices

should be heard, and teacher research has the potential to make significant inroads against existing hegemonic processes: to work against the dominant culture of the old South Africa which is still very much alive, and may emerge in another form in a new dispensation, and to work in favour of democratic alternatives.

We have a long way in South Africa to go to promote teacher research, and to work towards a culture of teacher research. Cochran-Smith and Lytle (1992) suggest that important steps would include the creation of conditions to support teachers' research work, enhancing teachers autonomy and opportunities to collaborate, the setting up of innovative structures in schools, and the building of intellectual communities of teacher researchers. In addition to this, it would in the South African context be important to unite teachers as a group with a clear agenda to develop own teaching practices, but also to contribute to the transformation of education in the country. In the process teacher research should be accepted as a distinctive way of knowing, and facilitators contribute towards creating structures and opportunities that can make teacher research work possible. Finally, teacher researcher projects that rely on teacher enquiry essentially contribute towards teacher empowerment, and go a long way to establish communities of teacher research, as propagated by Cochran-Smith and Lytle (1992).

APPENDIX 1

LISTS OF PROJECTS REVIEWED

A The Mathematics Education Project (Based at the University of Cape Town)

Projects in primary and secondary schools by mathematics teachers. The purpose was to develop teaching practices, and accounts of seven teachers were written up (Mathematics Education Project 1992; Colyn 1991).

B The Science Education Project (Based at the University of the Witwatersrand)

Curriculum development case study conducted with a group of thirteen secondary school science teachers (Sameul, Naidoo and Suransky 1992).

C Primary Education Project (Based at the University of Cape Town)

Project to test the feasibility of action research and alternative forms of inservice training of primary school teachers (Flanagan 1991). Also "to find ways in which the university and teachers can work together on some of the classroom problems". Initially 5 teachers in one primary school in 1987, and after that extended to other schools. Focus on teaching of history, reading, geography (Walker 1988; Morrison 1991; Marneweck 1991).

D Natal Primary Science Project

Project to improve the quality of science teaching in South Africa through the development of primary school teachers (PSP News Wagon 1992. Projects in "Teacher Committees" seen as part of the PSP evaluation strategy, in the form of participative action research projects (McNaught and Raubenheimer 1991). Teacher reports on work done collated in the evaluation report of McNaught and Raubenheimer (1991), and focus among other topics the use of science kits, using group work, and the development of worksheets.

E Masters in Action Research Project (Based at the University of the Western Cape)

Project to encourage teacher reflection, and to contribute to the transformation of classroom practices (Nicolson and Van den Berg 1989). Detail about four completed projects was accessed: "Action research in the graphics classroom: reflections of educational change initiatives in two schools" (Cowan 1990); "Changing classroom practice: reflections on two action research projects." (Davids, 1990); "Towards participatory teaching and learning processes in the English language classroom" (Manie 1992); "Intersubjectivity as a catalyst for personal growth: reflection on a masters degree course" (Savahl 1992).

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